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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,877	06/07/2005	Gillian Antoinette Mimmagh-Kelleher	NL021259US	8406
24737 7590 09/25/2007 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			EXAMINER SHAH, SAMIR M	
			ART UNIT 2856	PAPER NUMBER
			MAIL DATE 09/25/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/537,877

Applicant(s)

MIMNAGH-KELLEHER ET AL.

Examiner

Samir M. Shah

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 26-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicants' arguments filed 08/06/2007 have been fully considered but they are not persuasive.

As to Applicants' argument, "features [of claims 26 and 31] are nowhere taught or suggested in Nikolic et al. (US Patent 6,436,052 B1 henceforth "Nikolic"), Hutchings et al. (US Patent 6,122,960 henceforth "Hutchings"), Jacobsen et al. (US Patent 6,160,478 henceforth "Jacobsen"), and combination thereof," the Examiner disagrees.

2. Nikolic discloses processing (adding acceleration output/signals for each axis to a cumulative sum for the corresponding axis) as vector components of a vector to produce a magnitude of the vector using a look-up table of stored magnitudes and associated vector components. Note that adding the acceleration output to a cumulative sum inherently requires producing a magnitude of the vector and the look-up table that is employed for this process clearly includes stored magnitudes and associated vector components since acceleration is a vector quantity.

Further, for sake of argument, look-up tables are well-known in the activity monitoring art as an efficient means of providing information and thereby eliminating the need for performing extensive/repetitive calculations, which in turn, helps save energy/power. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include such a look-up table with stored magnitudes and

associated vector components in the activity monitoring apparatus of Hutchings or Jacobsen.

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

### ***Claim Objections***

4. Claim 29 is objected to because of the following informalities:

(a) As to claim 29, line 5, is "a magnitude of a resultant vector" the same as "a magnitude of the vector" recited in claim 1, line 7?

If so, as to claim 29, line 5, delete "a magnitude of a resultant vector" and replace it with --the magnitude of the vector-- (please refer to claim 34).

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 26-35 are rejected under 35 U.S.C. 102(e) as being anticipated by  
Nikolic.

(a) As to claims 26 and 27, Nikolic discloses an activity monitor/"system for sensing activity and measuring work performed by an individual"/system for measuring movement of objects/persons comprising:

a measurement unit/activity monitor (112) including a plurality of motion sensors/accelerometers (240) configured to produce sensor signals (accelerometer output) indicative of motion/acceleration of the plurality of motion sensors/accelerometers (240) (figures 1-6B; column 5, lines 2-5, 50-59); and

a processor (220)/clearinghouse (520) configured to receive the sensor signals (accelerometer output) from the measurement unit (112) and to process (add the acceleration output vector to a cumulative sum for each axis) the sensor signals

Art Unit: 2856

(accelerometer output) as vector components of a vector to produce a magnitude of the vector using a look-up table of stored magnitudes and associated vector components (figures 1-6B; column 5, lines 5-7; column 6, lines 50-51; column 7, lines 1-31; column 9, lines 25-52; column 12, lines 43-59; column 18, lines 7-25).

(b) As to claim 28, Nikolic discloses that the sensors/accelerometers are arranged to be mutually orthogonal (figures 1-6B; column 6, lines 42-46).

(c) As to claim 29, Nikolic discloses that the processor is further configured to calculate the magnitude of the vector according to the following expression:

$$|a| = \sqrt{(a_x^2 + a_y^2 + a_z^2)},$$

where  $a_x$ ,  $a_y$  and  $a_z$  are the vector components included in the sensor/accelerometer signals and  $|a|$  is the magnitude of a resultant vector (figures 2-4, 5A, 5B; column 6, lines 43-45; column 7, lines 19-20; column 11, lines 25-36; column 12, lines 43-59; column 14, line 66 - column 15, line 4; column 17, lines 63-65; column 18, lines 7-25).

(d) As to claims 31 and 32, Nikolic discloses a method of "sensing activity and measuring work performed by an individual"/monitoring activity of a subject/person comprising the steps of:

producing sensor signals (accelerometer output) indicative of motion of a plurality of motion sensors/accelerometers (240) (figures 1-6B; column 5, lines 2-5, 50-59); and

processing (adding the acceleration output vector to a cumulative sum for each axis) the sensor signals (accelerometer output) as vector components of a vector to produce a magnitude of the vector using a look-up table of stored magnitudes and associated vector components (figures 1-6B; column 5, lines 5-7; column 6, lines 50-51; column 7, lines 1-31; column 9, lines 25-52; column 12, lines 43-59; column 18, lines 7-25).

(e) As to claim 33, Nikolic discloses mutually orthogonal motion sensors/accelerometers (figures 1-6B; column 6, lines 42-46).

(f) As to claim 34, Nikolic discloses calculating the magnitude of the vector according to the following expression:

$$|a| = \sqrt{(a_x^2 + a_y^2 + a_z^2)},$$

where  $a_x$ ,  $a_y$  and  $a_z$  are the vector components included in the sensor/accelerometer signals and  $|a|$  is the magnitude of a resultant vector (figures 2-4, 5A, 5B; column 6, lines 43-45; column 7, lines 19-20; column 11, lines 25-36; column 12, lines 43-59; column 14, line 66 - column 15, line 4; column 17, lines 63-65; column 18, lines 7-25).

(g) As to claims 30 and 35, Nikolic discloses calculating a direction of the vector (figures 1-6B; column 4, line 66 - column 5, line 42; column 6, lines 50-57; column 14, line 66 - column 15, line 7).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 26-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hutchings in view of Nikolic as applied to claims 26-35 above.

(a) As to claims 26 and 27, Hutchings discloses an activity monitor comprising:  
a measurement unit (49) including a plurality of motion sensors/accelerometers configured to produce sensor signals (accelerometer output) indicative of motion/acceleration of the plurality of motion sensors/accelerometers (note: column 25 erroneously refers to unit (49) as unit (48)) (figure 16; column 23, line 66 - column 24, line 21; column 25, lines 3-25); and



a processor (52)/microprocessor (56) configured to receive the sensor signals (accelerometer output) from the measurement unit (49) and to process (measure a distance traversed and the speed of object) the sensor signals (accelerometer output) as vector components of a vector to produce a magnitude of the vector (figures 3-5, 8-14, 16; column 9, lines 17-64; column 10, lines 54-61; column 24, lines 16-22; column 25, lines 60-61; column 27, lines 29-37; equations 23, 32).

(b) As to claims 31 and 32, Hutchings discloses a method of monitoring activity comprising the steps of:

producing sensor signals (accelerometer output) indicative of motion of a plurality of motion sensors/accelerometers (figure 16; column 23, line 66 - column 24, line 21; column 25, lines 3-25); and

processing (measure a distance traversed and the speed of object) the sensor signals (accelerometer output) as vector components of a vector to produce a magnitude of the vector (figures 3-5, 8-14, 16; column 9, lines 17-64; column 10, lines 54-61; column 24, lines 16-22; column 25, lines 60-61; column 27, lines 29-37; equations 23, 32).

As to claims 26 and 31, Hutchings does not expressly disclose using a lookup table of stored magnitudes and associated vector components.

The disclosure set forth above for the rejection of claims 26-35 is relied upon. Nikolic teaches a "method and system for sensing activity and measuring work performed by an individual" including accelerometer data being stored on a storage device (250) and further processing accelerometer output/signals by using a look-up table of stored magnitudes and associated vector components (column 6, lines 50-51; column 7, lines 20-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hutchings's apparatus/method to include using a look-up table of stored magnitudes and associated vector components to process the sensor/accelerometer output/signals, as suggested by Nikolic, because this would enable a later access of these values for further calculations or comparative analyses (Hutchings, column 25, lines 35-37).

(c) As to claims 28 and 33, Hutchings discloses mutually orthogonal accelerometers.

(d) As to claims 29 and 34, Hutchings discloses calculating the magnitude of the vector according to the following expression:

$$|a| \text{ (or } |g|) = \sqrt{(a_x^2 + a_y^2 + a_z^2)},$$

where  $a_x$ ,  $a_y$  and  $a_z$  are the vector components included in the sensor/accelerometer signals and  $|a|$  (or  $|g|$ ) is the magnitude of a resultant vector (column 15, lines 22-30; equation 25; column 23, lines 66-67).

(e) As to claims 30 and 35, Hutchings discloses calculating a direction of the vector (column 3, lines 52-59; column 9, lines 28-36).

10. Claims 26-28, 30-33 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobsen in view of Nikolic as applied to claims 26-35 above.

(a) As to claims 26 and 27, Jacobsen discloses an activity monitor comprising:  
a measurement/monitoring unit (50) including a plurality of motion sensors (58, 60)/"at least one accelerometer" (58)/"plurality of accelerometers" configured to produce sensor signals (accelerometer output) indicative of motion/acceleration of the plurality of motion sensors/accelerometers (58, 60) (figure 2; column 3, lines 7-14; column 5, lines 25-30); and

a processor/processing unit (54) configured to receive the sensor signals (accelerometer output) from the measurement unit (50) and to process/interpret the sensor signals (accelerometer output) as vector components of a vector to produce a magnitude of the vector (figure 2; column 3, lines 15-47; column 5, lines 25-67; column 6, lines 1-22).

(b) As to claims 31 and 32, Jacobsen discloses a method of monitoring activity comprising the steps of:

Art Unit: 2856

producing sensor signals (accelerometer output) indicative of motion of a plurality of motion sensors/accelerometers (58, 60) (figure 2; column 3, lines 7-14; column 5, lines 25-30); and

processing/interpreting the sensor signals (accelerometer output) as vector components of a vector to produce a magnitude of the vector (figure 2; column 3, lines 15-47; column 5, lines 25-67; column 6, lines 1-22).

As to claims 26 and 31, Jacobsen does not expressly disclose using a lookup table of stored magnitudes and associated vector components.

The disclosure set forth above for the rejection of claims 26-35 is relied upon. Nikolic teaches a "method and system for sensing activity and measuring work performed by an individual" including accelerometer data being stored on a storage device (250) and further processing accelerometer output/signals by using a look-up table of stored magnitudes and associated vector components (column 6, lines 50-51; column 7, lines 20-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Jacobsen's apparatus/method to include using a look-up table of stored magnitudes and associated vector components to process the sensor/accelerometer output/signals, as suggested by Nikolic, because this would enable a later access of these values for further calculations or comparative analyses (Jacobsen, column 3, lines 25-47).

(c) As to claims 28 and 33, Jacobsen discloses "a three dimensional accelerometer", which is the equivalent of three accelerometers arranged to be mutually orthogonal (column 6, lines 45-47).

(d) As to claims 30 and 35, Jacobsen discloses calculating a direction of the vector (column 5, lines 33-37).

### ***Conclusion***

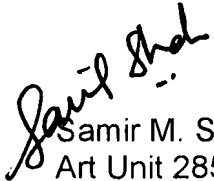
11. The prior art made of record and not relied upon, cited in the attached 892 form, is considered pertinent to applicant's disclosure.

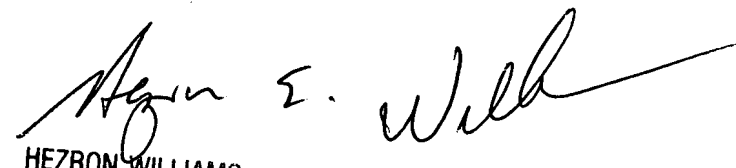
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samir M. Shah whose telephone number is (571) 272-2671. The examiner can normally be reached on Monday-Friday 10:00 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2856

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Samir M. Shah  
Art Unit 2856  
09/13/2007

  
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